

Applicant: Robert W. Coulombe
Serial No.: 10 / 649,219
Gp. Art Unit: 3643 (Robert P. Swiatek)
Filing Date: August 26, 2003

Listing of Claims:

This listing of claims will replace all prior versions of claims in the Application:

Claim 1 (Previously Amended): A gripping device for attachment to the bottom surface of a horse's hoof to spread the shock evenly upon the hoof engaging a contacting surface and taking pressure off the wall of the hoof, the device comprising:

a generally planar shock absorbing pad of elastomeric material, the pad having an outer periphery conforming to the outer periphery of the horse's hoof and an upper surface adapted to face towards and cover substantially all of the bottom surface of the hoof, and

a gripping member for improving the grip between a horse's hoof and the contacting surface, the gripping member being integrally formed and including a generally flat plate, a raised traction element for contacting the ground, and at least one raised clip for engaging the front outer periphery of the horse's hoof, the plate being embedded in the pad of elastomeric material, the traction element being positioned centrally of the pad whereby to overlies the frog of the horse's hoof and extending upwardly and outwardly from the elastomer in a direction away from the upper surface, and the clip extending upwardly and outwardly from the outer periphery of the pad and in a direction opposite to the traction element.

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Claim 2 (Original): The gripping device as claimed in Claim 1, further wherein the gripping member is T-shaped and formed by a head and a body section, the body section having a distal end disposed at the outer periphery of the pad and juxtaposed with the front of the horse's hoof, and the clip being formed at the distal end of the body section.

Claim 3 (Previously Amended): The gripping device as claimed in Claim 1, further wherein the gripping member is formed by a pair of body sections into an X-shape, the X-shape having a pair of distal ends disposed at the outer periphery of the pad and juxtaposed with the front sides of the horse's hoof, and a clip being formed at each distal end.

Claim 4 (Original): The gripping device as claimed in Claim 1, wherein the plate is comprised of a material capable of flexing, and the traction element will flex with the elastomeric pad and establish contact with the frog portion of the hoof to stimulate circulation.

Claim 5 (Original): The gripping device as claimed in Claim 4, wherein the plate is a material selected from aluminum, steel, steel alloys, a polymer, plastic and related composites.

Claim 6 (Currently Amended): A shock-absorbing pad that is adapted to be sandwiched between the bottom surface of a horse's hoof and the mating face of a horseshoe ~~attachable~~ when the horseshoe is attached to the bottom surface of said hoof, said pad comprising a body portion formed of an elastomeric material and

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having an outer peripheral shape ~~adapted to cover substantially all of the~~ that is coextensive with the outer periphery of the horse's hoof and an upper surface that covers the entire bottom surface of said hoof, and a generally planar stiffening plate embedded interiorly of said body portion, the upper surface of said shock absorbing pad, when in use, being in direct contact with the bottom surface of said hoof, and said stiffening plate including a raised traction element extending away from the bottom surface and a toe clip extending from the outer periphery of the pad and towards the bottom surface whereby to engage the outer periphery of the hoof.

Claim 7 (Previously Amended): The shock absorbing pad as claimed in Claim 6, wherein the pad is wedge shaped for effecting a change in either the balance of the hoof or gait of the horse.

Claim 8 (Previously Amended): A kit for horseshoeing, said kit comprising:

an elastomeric pad for attachment to the bottom surface of a hoof to be shod and protecting the hoof from concussive forces, and

a U-shaped horseshoe, the horseshoe having a lower surface for engaging the ground and an upper surface,

said pad having an upper face for engaging the bottom surface of said hoof, and a lower face for engaging the upper surface of the horseshoe, said pad including a raised traction section for providing traction with the ground and a toe clip for engaging the forward outer periphery of the horse's hoof, the traction section

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positioned centrally of the pad for overlying the frog portion of the horse's hoof and extending away from the lower face when the pad is attached to the bottom surface of the horse's hoof, and the clip extending from the outer periphery of said pad and in a direction away from the upper face of said pad.

Claim 9 (Previously Amended): The kit of Claim 8, wherein the elastomeric pad is dimensioned to cover substantially all of the bottom surface of the hoof, and the traction element has first and second portions, respectively, embedded in and projecting upwardly from the elastomeric material.

Claim 10 (Original): The kit of Claim 9, wherein the kit includes means for securing the horseshoe and the pad to the hoof with the pad sandwiched between the hoof and the horseshoe.

Claim 11 (Original): The kit of claim 10, wherein the pad includes a pair of toe clips, the clips extending from the elastomer for engagement with the forward peripheral side of a horse's hoof.

Claim 12 (Previously Amended): A kit for horseshoeing, said kit comprising:

a horseshoe, the horseshoe having an upper surface for attachment to the bottom surface of a hoof to be shod and a lower surface for engaging the ground, the horseshoe comprising an elastomeric pad for protecting the hoof from concussive forces, the pad having a curvilinear outer periphery conforming to the outer periphery of the horse's hoof and forming the upper and lower surfaces, a pair of

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openings extending between the upper and lower surfaces, a raised traction element embedded into the elastomeric pad and having an inner and outer periphery, the inner periphery of the traction element forming a central chamber that extends between the surfaces of the pad and permits access to the bottom surface of the hoof when the pad is attached to the hoof, and at least one toe clip extending from the outer periphery of the pad to engage the outer periphery of the hoof,

a hospital plate, the hospital plate being removably mountable to the lower surface and in covering relation to the openings, the hospital plate having a curvilinear periphery that conforms, at least in part, to the outer periphery of the traction element for snug fitment thereabout,

a second pad, the second pad being comprised of soft polymeric material having a curvilinear outer periphery that conforms to the inner periphery of the traction element for snug fitment of the second pad within the within the central chamber, and

at least one fastener for fastening the hospital plate to the horseshoe.

Claim 13 (Previously Amended): The kit of Claim 12, wherein the at least one toe clip is integrally formed with the elastomeric material, the toe clip being adapted to be bent against the hoof and be disposed at an acute angle relative to the upper surface.

Claim 14 (Original): The kit of Claim 13, wherein a single toe clip is integrally formed with the elastomeric material, the toe clip being disposed at the

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forward end of the elastomeric material for engaging the front center of the outer peripheral surface of the horse's hoof.

Claim 15 (Original): The kit of Claim 13, wherein a pair of toe clips are integrally formed with the elastomeric material, the toe clips being disposed along the forward side of the elastomeric material for engaging the sides of the outer peripheral surface of the horse's hoof.

Claim 16 (Original): The kit of Claim 13, wherein the elastomeric material and the hospital plate are each comprised of different materials having a respective resistance to flexure, the material of the hospital plate being more rigid and resistant to flexing than the elastomeric material.

Claim 17 (Original): The kit of Claim 16, wherein the hospital plate is an aluminum plate, the elastomeric material is neoprene or a high-grade rubber, and the second pad is a polyfoam or softer polyurethane material.

Claim 18 (Previously Amended): A horseshoe assembly for attachment to the bottom surface of a horse's hoof, the assembly comprising:

a U-shaped horseshoe having an upper surface, a lower surface for contacting the ground, an exterior sidewall, and an interior sidewall,

a thin pad of a resilient elastomeric material, the pad being compressible in response to the horse placing its weight on the hoof and having an outer periphery that is complementary to the exterior sidewall of said horseshoe, an upper surface

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that abuts against the bottom surface of the horse's hoof, and a lower surface that abuts against the upper surface of said horseshoe,

a traction plate embedded within the elastomeric material, said traction plate including a raised traction element that extends downwardly from said traction plate and outwardly of the lower surface of said pad, said traction element extending downwardly from the lower surface of said pad by an amount not protruding beyond the lower surface of the horseshoe when the horseshoe and pad are attached to the hoof,

at least one clip for engagement with the outer peripheral surface of the horse's hoof, said clip extending from the outer periphery of said pad and bendable so as to extend perpendicularly upwardly relative to the upper surface of said pad, and

means for attaching said pad member and said horseshoe to the bottom surface of the horse's hoof with the pad being sandwiched between the bottom surface of the horse's hoof and the horseshoe.

Claim 19 (Original): The horseshoe assembly as claimed in Claim 18, wherein said at least one clip is adapted to be centered with the front of the hoof and engaged with the outer surface of the hoof.

Claim 20 (Original): The horseshoe assembly as claimed in Claim 18, wherein at least two clips are provided, each clip being adapted to be positioned about opposite sides of the hoof and engage the outer surface of the hoof.

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Claim 21 (Previously Amended): The horseshoe assembly as claimed in Claim 18, wherein said at least one clip is formed as a part of the traction plate and is adapted to angle upwardly and backwardly from outer periphery of said pad.

Claim 22 (Original): The horseshoe assembly as claimed in Claim 19, wherein the traction plate is generally T-shaped with the body of the T-shape having a distal end disposed at the outer periphery of the pad, and said clip is formed with the body of said T-shape, the clip being connected to the distal end.

Claim 23 (Original): The horseshoe assembly as claimed in Claim 20, wherein the traction plate is generally X-shaped with the body of the X-shape having a pair of distal ends disposed at the outer periphery of the pad, and said clips are formed with the body of the X-shape, each clip being connected to a respective of said distal ends.

Claim 24 (Original): The horseshoe assembly as claimed in Claim 18, wherein the pad is dimensioned to completely cover the entire bottom surface of the horse's hoof whereby to reduce concussion forces and alter hoof balance.

Claim 25 (Original): The horseshoe assembly as claimed in Claim 19, wherein the outer periphery of the pad is generally curvilinear, symmetrical about a central axis, and wedge shaped for effecting a change in balance of the hoof.

Claim 26 (Currently Amended): A horseshoe for covering and protecting the bottom surface of a horse's hoof from shock and concussive forces when the horseshoe is attached thereto, the horseshoe comprising:

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a planar flexure plate embedded into a body of a first elastomeric material, said flexure plate having a curvilinear outer periphery and an arcuate forward end portion, said elastomeric material forming an upper surface that is ~~abutable~~ in direct contacting engagement against the bottom surface of the hoof when the pad is in use, a lower surface that engages the ground, and an outer periphery, the outer periphery defined by the elastomeric material covering the flexure plate and being coextensive with the outer periphery of the horse's hoof, and

at least one clip for engaging the horse's hoof when the horseshoe is attached to the bottom surface of the horse's hoof, said at least one clip extending upwardly from the outer periphery of said elastomeric material for engagement with the outer periphery of the horse's hoof.

Claim 27 (Original): The horseshoe as claimed in Claim 26, further including a toe calk for providing traction to the horseshoe, said toe calk being disposed at the forward end portion of said flexure plate and projecting upwardly from said lower surface and away from the horse's hoof when the horseshoe is attached thereto.

Claim 28 (Original): The horseshoe as claimed in Claim 27, wherein said toe calk is generally arcuate and includes a bottom end that is juxtaposed against the forward end portion of the flexure plate, a top end that extends above the flexure plate projects away from the upper surface, and a pair of spaced endwalls,

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and an annular groove that extends between the endwalls, the bottom end portion and the annular groove of the toe calk being embedded in the elastomeric material.

Claim 29 (Original): The horseshoe as claimed in Claim 28, wherein said flexure plate includes a pair of arcuate stiffening ribs for providing traction to the horseshoe, each arcuate stiffening rib projecting upwardly from the flexure plate and in a direction away from the horse's hoof when the horseshoe is attached thereto, and the toe calk being disposed in centered relation between the stiffening ribs.

Claim 30 (Previously Amended): The horseshoe as claimed in Claim 26, wherein

said flexure plate includes central and peripheral sections that are symmetrically disposed relative to a central axis through the plate, the central section being adapted to overlies the frog portion of the horse's hoof and interconnected to the peripheral sections whereby to form a pair of shaped openings in the flexure plate, and

said shaped openings are removably filled with elastomeric material, removal of the elastomer exposing the bottom surface of the hoof to permit the horse's hoof to be accessed to tend to a wound thereto.

Claim 31 (Previously Amended): The horseshoe as claimed in Claim 29, wherein said toe calk and said arcuate stiffening ribs cooperate to form a curvilinear shape, and further including:

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a hospital plate of rigid material, said hospital plate being generally planar, curvilinear, and sized to cover the shaped openings, the outer periphery of the hospital plate conforming, at least in part, to the curvilinear shape formed by the toe calk and the arcuate stiffening ribs, and

means for removably attaching the hospital plate to the horseshoe.

Claim 32 (Previously Amended): The horseshoe as claimed in Claim 31, further wherein the flexure plate further comprises a raised curvilinear traction section, the traction section defining a curvilinear chamber that extends between the upper and lower surfaces of the of the elastomeric material, said arcuate stiffening ribs being dimensioned to project above said traction section.

Claim 33 (Currently Amended): The horseshoe as claimed in Claim 32, further comprising a planar pad comprised of a second elastomeric material, said planar pad having a curvilinear outer periphery sized to conform to and frictionally fit within the curvilinear chamber, such that dirt entering and filling the chamber transmits circulation stimulating forces to the frog.

Claim 34 (Original): The horseshoe as claimed in Claim 26, wherein said flexure plate is integrally formed of a resilient material, wherein the material is aluminum, a high-grade polyurethane, polyethylene, or ABS.

Claim 35 (Original): The horseshoe as claimed in Claim 26, wherein the elastomeric material is rubber, neoprene, a polymer, polyurethane, polyethylene, or ABS.

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Claim 36 (Previously Amended): The horseshoe as claimed in Claim 31, wherein said hospital plate is high-grade polyurethane or aluminum.

Claim 37 (Presently Amended): The horseshoe as claimed in Claim 33, wherein the second elastomeric material of said ~~second~~ planar pad is a polyurethane or polymer foam.

Claim 38 (Original): A horseshoe for attachment to a horse's hoof, comprising: a one-piece planar flexure plate embedded into a body of first elastomeric material, the body of elastomeric material forming an upper surface that engages the bottom of the horse's hoof and a lower surface, the flexure plate having an outer peripheral shape conforming to the shape of the hoof and including a forward end portion, a raised T-shaped wall section and a pair of raised arcuate peripheral wall sections, the T-shaped wall section overlying the frog of the horse's hoof when the horseshoe is attached thereto and forming a T-shaped chamber, and the raised wall T-shaped and arcuate sections forming traction surfaces, a pair of shaped openings that permit access to the frog of the horse's hoof, at least one clip for engagement against the horse's hoof, the clip angling upwardly and backwardly relative to the upper surface, a toe calk positioned at the forward end portion of the flexure plate, the toe calk having a bottom end portion embedded in the elastomeric material and a top end disposed above the upper surface, a hospital plate of rigid material disposed against the upper surface and removably connected to the flexure plate, the hospital plate having a curvilinear outer periphery conforming to the

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raised wall sections, the toe calk and the T-shaped wall section, the hospital plate covering the shaped openings, and a T-shaped pad of second elastomeric material removably disposed within said T-shaped chamber to provide support and transmit forces that stimulate the frog.

Claim 39 (Original): The horseshoe as claimed in Claim 38, wherein the clip is integrally formed with the first elastomeric material, the clip being centered relative to the forward end portion of the flexure plate to engage the front surface of the hoof.

Claim 40 (Original): The horseshoe as claimed in Claim 38, wherein two clips are integrally formed with the first elastomeric material, the two clips being positioned relative to the forward end portion of the flexure plate to engage the side surface of the hoof.

Claim 41 (Original): The horseshoe as claimed in Claim 38, further wherein the toe calk and the raised peripheral wall sections form a generally continuous U-shaped wall section, and further including a raised arcuate end wall section, the arcuate end wall section being forward of the arcuate toe calk and projecting upwardly from the forward end portion of the flexure plate, the space between the lower end of the toe calk and raised arcuate and wall section being filled with the elastomeric material.

Claim 42 (Original): The horseshoe as claimed in Claim 41, further wherein the lower end of the toe calk includes a recessed groove, the recessed groove

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being filled with the elastomeric material to further increase a gripping securement therewith.

Claim 43 (Previously Amended): Apparatus for the hoof a horse, the apparatus comprising:

a generally planar support pad formed of a resilient material and having upper and lower surfaces, the upper surface being juxtaposable with the horse's hoof, an outer edge portion that is sandwichable between the horse's hoof and a horseshoe, and at least one central cutout portion to provide access to the frog portion of the horse's hoof,

a curvilinear traction element connected to the support pad, said traction element being positioned centrally of the outer edge portion of the support pad and projecting away from the lower surface of the support pad, and

a hospital plate that is removably mountable to the support pad to cover the central cutout portion, said hospital plate including a curvilinear edge which is complementary to and seats about the traction element and against the interior of the horseshoe.

Claim 44 (Original): Apparatus for protecting the hoof a horse from concussive forces, the apparatus comprising:

a generally planar support pad that is formed of a resilient material, said support pad having an upper surface that is positionable against the bottom surface of the horse's hoof and a lower surface, an outer edge portion that is sandwichable

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between the horse's hoof and a horseshoe when mounted to the hoof, and two cutout portions to provide access to frog portion of the horse's hoof,

a stiffening plate including at least two legs that are connected to the support pad and a Y-shaped traction element that projects away from the lower surface of the support pad, the traction element being positionable centrally of the outer edge portion and between the two cutout portions whereby to overlie the frog and central portions of the horse's hoof when said pad is positioned relative to the hoof,

a hospital plate that is removably mountable to the lower surface of said support pad whereby to be in covering relation with the cutout portions, said hospital plate including a curvilinear edge which is complementary to and seats, in part, about the traction element and against the interior of the horseshoe, and

means for removably affixing the hospital plate to the support pad.

Claim 45 (Original): The apparatus as claimed in Claim 44, wherein said means for removably affixing comprises at least one threaded fastener, a threaded aperture in said stiffening plate, and an aperture in said hospital plate, said apertures being alignable with one another wherein to permit the fastener to pass therethrough and removably secure the hospital plate to said stiffening element.